REMARKS

The above-identified patent application has been amended and reconsideration and re-examination are hereby requested.

Applicant wishes to make of record a telephone conversation held with the Examiner on April 15, 2003. Applicant pointed out that on the Office Action Summary form both box 2a and 2b were checked. The Examiner confirmed that only box 2b should have been checked.

An Information Disclosure Statement was filed on January 21, 2003 (copy enclosed). The Form 1449 has not been initialed.

Claim 1 has been cancelled.

Claim 2 has been rewritten into independent form deleting the word "global" in original claim 1.

Claim 4 has been amended to delete the word "global."

It is respectfully submitted that claim 2 and claim 4 are now in accordance with 35 USC 112, second paragraph.

Claims 1-6 stand rejected as being anticipated by Ninomiya, US Patent No. 5,819,054. The Examiner refers to figure 8 and column 8 lines 29-30. It is noted, however, that this section of Ninomiya relates to the system in figure 8 and such system is not a point to point system. That is the system of figure 8 does not have " separate point-to-point data paths between each one of the directors and the cache memory" as in claim 2 and claim 4.

Claims 1-6 stand rejected under 35 USC 103 as being unpatentable over Martin in view of Ninomiya.

With regard to this rejection, before discussing the claims and how they distinguish over this cited art, perhaps it might be helpful to review features of applicant's invention.

As described in the patent application, referring now to FIG. 2, a data storage system 100 is shown for transferring data between a host computer/server 120 and a bank of disk drives 140 through a system interface 160. The system interface 160 includes: a plurality of,

here 32 front-end directors 180_1-180_{32} coupled to the host computer/server 120 via ports-123_{32}; a plurality of back-end directors 200_1-200_{32} coupled to the bank of disk drives 140 via ports 123_{33}-123_{64}; a data transfer section 240, having a global cache memory 220, coupled to the plurality of front-end directors 180_1-180_{16} and the back-end directors 200_1-200_{16}; and a messaging network 260, operative independently of the data transfer section 240, coupled to the plurality of front-end directors 180_1-180_{32} and the plurality of back-end directors 200_1-200_{32}, as shown. The front-end and back-end directors 180_1-180_{32}, 200_1-200_{32} control data transfer between the host computer/server 120 and the bank of disk drives 140 ***in response to messages passing between the directors 180_1-180_{32}, 200_1-200_{32} through the messaging network 260***. The messages facilitate the data transfer between host computer/server 120 and the bank of disk drives 140 with such data passing through the global cache memory 220 via the data transfer section 240.

More particularly, in the case of the front-end directors 180_1-180_{32}, the data passes between the host computer to the global cache memory 220 through the data pipe 316 in the front-end directors 180_1-180_{32} and the messages pass through the message engine/CPU controller 314 in such front-end directors 180_1-180_{32}. In the case of the back-end directors 200_1-200_{32} the data passes between the back-end directors 200_1-200_{32} and the bank of disk drives 140 and the global cache memory 220 through the data pipe 316 in the back-end directors 200_1-200_{32} and again the messages pass through the message engine/CPU controller 314 in such back-end director 200_1-200_{32}.

With such an arrangement, the cache memory 220 in the data transfer section 240 is not burdened with the task of transferring the director messaging. Rather the messaging network 260 operates independent of the data transfer section 240 thereby increasing the operating bandwidth of the system interface 160.

Referring now to FIG. 5, the system interface 160 is shown to include the director boards 190_1-190_8, 210_1-210_8 and the global cache memory 220, plugged into the backplane 302 and the disk drives 141_1-141_{32} in the bank of disk drives along with the host computer 120 also plugged into the backplane 302 via I/O adapter boards, not shown. The message

network 260 (FIG. 2) includes the message network boards 304_1 and 304_2. Each one of the message network boards 304_1 and 304_2 is identical in construction. A pair of message network boards 304_1 and 304_2 is used for redundancy and for message load balancing. Thus, each message network board 304_1, 304_2, includes a controller 306, (i.e., an initialization and diagnostic processor comprising a CPU, system controller interface and memory, as shown in ***FIG. 6 for one of the message network boards 304_1, 304_2 here board 304_1) and a crossbar switch section 308 (e.g., a switching fabric made up of here four switches 308_1-308_4).***

Referring now to the rejection, the Examiner indicates that the claimed message network is element 40 in Martin et al. Referring to Martin et al, column 5, beginning at line 63 and continuing to column 6, line 15:

> The control subsystem 40 provides control for the allocation and de-allocation of common resources for the mass storage library system. When an interface tape server 14, 16 or 18 or the interface disk server computer 19 receives a command to read or write data, it first requests resources from the control subsystem 40. Computer 40 will initialize and position the appropriate resources and informs the requesting IFS when the resources are available. Control of the recorder resources is then passed to the requesting IFS. Once the operation is complete, the controlling IFS informs control computer 40 that the operation is complete and the control computer 40 de-allocates those resources. Thus, the control computer 40 communicates with the IFS tape servers 14, 16 and 18 and the IFS disk server 19 through line 58 which could be any one of a number of commercially available networks. It also communicates with the switch subsystem 42 through line 60, the drive subsystem 44 through line 62 and the storage/transport subsystem 56 through line 64. These lines 58, 60, 62 and 64 are not necessarily independent.

Also, referring to Martin et al., column 9, lines 28-44:

> The CNS 40 includes a control processor 114, a console processor 116, a high speed printer (not shown), and a media label printer 118. The control processor 114 and the console processor 116 are Sun 3 Series 200 workstations. They share a disk pool and provide immediate mutual redundancy. Both processors are connected to the line printer (not shown) that is capable of printing at least 300 lines per minute. Both processors are also connected to a media label printer 118 through the MSL control LAN 95. The

media label printer 118 produces machine readable and human readable media labels. This configuration enables the CNS 40 to tolerate the failure of a single disk drive with no degradation in performance or throughput. In the event of a processor failure, either processor can be configured to perform the entire processing function.

Referring now to the claims:

Claim 4 points out that the messaging network is coupled to the plurality of first directors and the plurality of second directors, such first and second directors controlling data transfer between the host computer and the bank of disk drives in response ***to messages passing between the directors through the messaging network as such data passes through the memory via the data transfer section***, thereby distingusihing over Martin.

Claim 7 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors, thereby further distinguishing over Martin.

Claim 8 points out that the messaging network comprising a switch network having ***a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first directors and second directors***, such message network being operative independently of the data transfer section; and wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second directors ***through the messaging network*** to facilitate data transfer between first directors and the second directors with such data passing through the cache memory in the data transfer section, thereby distinguishing over Martin.

Claim 9 points out that the messaging network is coupled to the plurality of first directors and the plurality of second directors and wherein the first and second directors control data transfer between the first directors and the second directors in response to ***messages passing between the first directors and the second directors through the messaging network*** with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section, thereby distinguishing over Martin.

Claim 10 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors, thereby further distinguishing over Martin.

Claim 11 points out that wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second ***directors through the messaging network*** with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section, thereby distinusihing over Martin.

Claim 12 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors, thereby further distinguishing over Martin.

Claim 13 points out that the messaging network comprising a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors; and wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second directors ***through the messaging network*** with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section, thereby distinguishing over Martin.

Claim 14 points out that messages pass between the directors through the messaging network with such data passing through the cache memory in the data transfer section, thereby distinguishing over Martin.

Claim 16 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors, thereby distinguishing over Martin.

Claim 18 points out that messages pass between at least a pair of the plurality of first and second directors through the messaging network with such data passing through the cache memory in the data transfer section, thereby distinguishing over Martin.

Claim 20 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors thereby distinguishing over Martin.

Claim 22 points out that messages pass between the directors through the messaging network with such data passing through the cache memory in the data transfer section, thereby distinguighing over Martin.

Claim 24 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors, thereby distinguishing over Martin.

Claim 26 points out that messages pass between the directors through the messaging network with such data passing through the cache memory in the data transfer section, thereby distinguishing over Martin.

Claim 27 points out that messages pass between the directors through the messaging network, thereby distinguishing over Martin.

Claim 28 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors, thereby distinguishing over Martin.

Claim 29 points out that messages pass between the directors through the messaging network, thereby distinguishing over Martin.

Claim 30 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors, thereby distinguishing over Martin.

Claim 31 points out that the messaging network comprising a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors and messages pass between the directors through the messaging network, thereby distinguishing over Martin.

Claim 32 points out that messages pass between the directors through the messaging network, thereby distinguishing over Martin.

Claim 34 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors, thereby distinguishing over Martin.

Claim 36 points out that messages pass between at least a pair of the plurality of first and second directors through the messaging network with such data passing through the cache memory in the data transfer section, thereby distinguishing over Martin.

Claim 38 points out that the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors, thereby distinguishing over Martin.

In the event any additional fee is required, please charge such amount to Patent and Trademark Office Deposit Account No. 50-0845.

Respectfully submitted,

5/1/03
Date

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Attachment: Claim Mark Up Sheets
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COMPARISON CLAIMS

~~1. A data storage system for transferring data between a host computer/server and a bank of disk drives through a system interface, such system interface comprising:~~

~~a plurality of first directors coupled to the host computer/server;~~

~~a plurality of second directors coupled to the bank of disk drives;~~

~~a cache memory; and~~

~~wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.~~

2. (Amended) ~~The system recited in claim 1~~ A data storage system for transferring data between a host computer/server and a bank of disk drives through a system interface, such system interface comprising:

a plurality of first directors coupled to the host computer/server;

a plurality of second directors coupled to the bank of disk drives;

a cache memory;

wherein there are separate point-to-point data paths between each one of the directors and the cache memory and

including a backplane and wherein the cache memory and the directors are interconnected through the backplane.

3. The system recited in claim 2 wherein the backplane is a printed circuit board.

4. (Amended) A data storage system for transferring data between a host computer/server and a bank of disk drives through a system interface, such system interface comprising:

a plurality of first directors coupled to the host computer/server;

a plurality of second directors coupled to the bank of disk drives;

a cache memory;

a data transfer section coupled to the plurality of first directors, the second directors, and the cache memory;

a messaging network coupled to the plurality of first directors and the plurality of second directors, such first and second directors controlling data transfer between the host computer and the bank of disk drives in response to messages passing between the directors through the messaging network as such data passes through the memory via the data transfer section;

wherein there are separate point-to-point data paths between each one of the directors and the ~~global~~ cache memory.

5. The system recited in claim 4 including a backplane and wherein the cache memory and the directors are interconnected through the backplane.

6. The system recited in claim 5 wherein the backplane is a printed circuit board.

7. (NEW) The system recited in claim 4 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors.

8. (NEW) A system interface comprising:

a plurality of first directors;

a plurality of second directors;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of first and second directors;

a messaging network comprising a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first directors and second directors, such message network being operative independently of the data transfer section;

wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second directors through the messaging network to facilitate data transfer between first directors and the second directors with such data passing through the cache memory in the data transfer section.; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

9. (NEW) A system interface comprising:

a plurality of first directors;

a plurality of second directors;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of first and second directors;

a messaging network, operative independently of the data transfer section, coupled to the plurality of first directors and the plurality of second directors;

wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second directors through the messaging network with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

10. (NEW) The system interface recited in claim 9 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors.

11. (NEW) A system interface comprising:

a plurality of first directors;

a plurality of second directors;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of first and second directors;

a messaging network coupled to the plurality of first directors and the plurality of second directors;

wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second directors through the messaging network with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

12. (NEW) The system interface recited in claim 11 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors.

13. (NEW) A system interface comprising:

a plurality of first directors;

a plurality of second directors;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of first and second directors;

a messaging network comprising a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors;

wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first

directors and the second directors through the messaging network with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

14. (NEW). A system interface comprising:

a plurality of directors

a data transfer section having a cache memory, such cache memory being coupled to the plurality of directors;

a messaging network, operative independently of the data transfer section, coupled to the plurality of directors;

wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such data passing through the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

15. (NEW). The system interface recited in claim 14 wherein each one of the directors includes:

a data pipe coupled between an input of such one of the directors and the cache memory; and

a controller for transferring the messages between the message network and such one of the directors.

16. (NEW) The system interface recited in claim 14 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors.

17. (NEW) The system interface recited in claim 16 wherein each one of the directors includes:

a data pipe coupled between an input of such one of the directors and the cache memory; and

a controller for transferring the messages between the message network and such one of the directors.

18. (NEW) A data storage system for transferring data between a host computer/server and a bank of disk drives through a system interface, such system interface comprising:

a plurality of first directors coupled to host computer/server;

a plurality of second directors coupled to the bank of disk drives;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of first and second directors;

a messaging network, operative independently of the data transfer section, coupled to the plurality of first directors and the plurality of second directors;

wherein the first and second directors control data transfer between the host computer and the bank of disk drives in response to messages passing between at least a pair of the plurality of first and second directors through the messaging network with such data passing through the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

19. (NEW) The system interface recited in claim 18 wherein each one of the first and second directors includes:

a data pipe coupled between an input of such one of the first and second directors and the cache memory;

a controller for transferring the messages between the message network and such one of the first and second directors.

20. (NEW) The system interface recited in claim 18 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors.

21. (NEW) The system interface recited in claim 20 wherein each one of the directors includes:

a data pipe coupled between an input of such one of the directors and the cache memory; and

a controller for transferring the messages between the message network and such one of the directors.

22. (NEW) A system interface comprising:

a plurality of directors;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of directors;

a messaging network, operative independently of the data transfer section, coupled to the plurality of directors;

wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such data passing through the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

23. (NEW) The system interface recited in claim 22 wherein each one of the directors include:

a data pipe coupled between an input of such one of the directors and the cache memory;

a controller for transferring the messages between the message network and such one of the directors.

24. (NEW) The system interface recited in claim 22 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors.

25. (NEW) The system interface recited in claim 23 wherein each one of the directors includes:

a data pipe coupled between an input of such one of the directors and the cache memory; and

a controller for transferring the messages between the message network and such one of the directors.

26. (NEW) A system interface comprising:

a plurality of directors;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of directors;

a messaging network comprising a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors, such message network being operative independently of the data transfer section;

wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such data passing through the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the

directors and the global cache memory.

27. (NEW) A system interface comprising:

a plurality of directors;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of directors;

a messaging network, operative independently of the data transfer section, coupled to the plurality of directors;

wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

28. (NEW) The system interface recited in claim 27 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors.

29. (NEW) A system interface comprising:

a plurality of directors;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of directors;

a messaging network coupled to the plurality of directors;

wherein the first and second directors control data transfer in response to messages passing between the directors through the messaging network with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

30. (NEW) The system interface recited in claim 29 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors.

31. (NEW) A system interface comprising:

a plurality of directors;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of directors;

a messaging network comprising a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors;

wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

32. (NEW). A system interface comprising:

a plurality of directors

a data transfer section having a cache memory, such cache memory being coupled to the plurality of directors;

a messaging network, operative independently of the data transfer section, coupled to the plurality of directors;

wherein the directors control data transfer in response to messages passing

between the directors through the messaging network with such data passing through the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

33. (NEW). The system interface recited in claim 32 wherein each one of the directors includes:

a data pipe coupled between an input of such one of the directors and the cache memory; and

a controller for transferring the messages between the message network and such one of the directors.

34. (NEW) The system interface recited in claim 32 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of directors.

35. (NEW) The system interface recited in claim 32 wherein each one of the directors includes:

a data pipe coupled between an input of such one of the directors and the cache memory; and

a controller for transferring the messages between the message network and such one of the directors.

36. (NEW) A data storage system for transferring data between a host computer/server and a bank of disk drives through a system interface, such system interface comprising:

a plurality of first directors coupled to host computer/server;

a plurality of second directors coupled to the bank of disk drives;

a data transfer section having a cache memory, such cache memory being coupled to the plurality of first and second directors;

a messaging network, operative independently of the data transfer section, coupled to the plurality of first directors and the plurality of second directors;

wherein the first and second directors control data transfer between the host computer and the bank of disk drives in response to messages passing between at least a pair of the plurality of first and second directors through the messaging network with such data passing through the cache memory in the data transfer section; and

wherein there are separate point-to-point data paths between each one of the directors and the global cache memory.

37. (NEW) The system interface recited in claim 36 wherein each one of the first and second directors includes:

a data pipe coupled between an input of such one of the first and second directors and the cache memory;

a controller for transferring the messages between the message network and such one of the first and second directors.

38. (NEW) The system interface recited in claim 36 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to a corresponding one of the plurality of first and second directors.

39. (NEW) The system interface recited in claim 38 wherein each one of the directors includes:

a data pipe coupled between an input of such one of the directors and the cache memory; and

a controller for transferring the messages between the message network and such one of the directors.

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PTO/SB/21 (08-00)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	362

Application Number	09/606,730
Filed On	June 29, 2000
First Named Inventor	Paul C. Wilson
Group Art Unit	2754
Examiner Name	Not Yet Assigned
Attorney Docket Number	EMC2-048PUS

ENCLOSURES *(check all that apply)*

- [ ] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment / Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [x] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Assignment Papers *(for an Application)*
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
- [ ] After Allowance Communication to Group
- [ ] Appeal Communication to Board of Appeals and Interferences
- [ ] Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) *(please identify below)*:

PTO 1449 Form with 21 cited references and Return-receipted postcard

Remarks

In the event a petition for extension of time is required by this paper and not otherwise provided, such petition is hereby made and authorization is provided herewith to charge deposit account No. 50-0845 for the cost of such extension.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	**Richard M. Sharkansky** Reg. No. 25,800 Daly, Crowley & Mofford, LLP
Signature	
Date	January 21, 2003

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231 on this date: January 21, 2003

Typed or printed name	**Tanya Blount**		
Signature	Tanya Blount	Date	January 21, 2003

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Paul C. Wilson et al.
Application No.:	09/606,730
Filed:	June 29, 2000
Entitled:	DATA STORAGE SYSTEM HAVING POINT-TO-POINT CONFIGURATION
Docket No.:	EMC2-048PUS

Group Art Unit: 2754

Examiner: Not Yet Assigned

Certificate of Mailing (37 C.F.R. 1.8(a))

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1-21-03
Date of Signature and Mail Deposit

By: Tanya Blount
Tanya Blount

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, DC 20231

Dear Sir:

It is desired to cite for the record in this application the enclosed documents listed on the attached copy of PTO Form #1449. The paragraph(s) marked below are applicable to this Information Disclosure Statement.

[X] (1) The enclosed Information Disclosure Statement is being filed: within three months of the filing date; or within three months of the entry of the national stage of the above-identified application; or before the mailing of a first Office Action on the merits; or before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. §1.114. Accordingly, Applicant(s) believes that no fee or statement is required.

[ ] (1a) Applicant(s) believe the enclosed Information Disclosure Statement is entitled to the benefit of 37 C.F.R. § 1.97 (b) (3). Accordingly, Applicant(s) believe that no fee or statement is required.

[ ] (1b) Pursuant to 37 C.F.R. § 1.97(c), the enclosed Information Disclosure Statement is being filed before the mailing date of a final action or a notice of allowance and is accompanied by:

[ ] a statement under 37 C.F.R. § 1.97(e); [ ] the fee set forth in § 1.17(p).

PETITION UNDER 37 C.F.R. § 1.97(d)

[ ] (2) Pursuant to 37 C.F.R. § 1.97(d), Applicant(s) hereby petition the Assistant Commissioner to consider the attached Information Disclosure Statement. Applicant(s) state that the issue fee has not been paid and that a statement under 37 C.F.R. § 1.97(e) is provided herein, along with the petition fee of $180.00 required under 37 C.F.R. § 1.17(i).

STATEMENT UNDER 37 C.F.R. § 1.97(e) (1)

[ ] (3) The undersigned hereby states that each item of information contained in the attached Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application mailed not more than three months prior to the filing of the accompanying Information Disclosure Statement.

STATEMENT UNDER 37 C.F.R. § 1.97 (e) (2)

[ ] (4) The undersigned hereby states that no item of information contained in the accompanying Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, after making reasonable inquiry, no item of information contained in the accompanying Information Disclosure Statement was known to any individual having a duty of disclosure as set forth in 37 C.F.R. § 1.56 (c) more than three months prior to the filing of the accompanying Information Disclosure Statement.

The filing of this Information Disclosure Statement is not a representation by the undersigned as to personal knowledge of the contents of every word or phrase of the material enclosed or that reliance on other suitably trained professionals has not been made.

If a search report of a searching agency is enclosed identifying the nature of the relevance of each document, such a designation is deemed to satisfy Rule 98(a) (3) even if in a foreign language, since the few terms of relevance therein are deemed of universal cognizance. However, Applicant(s) does not necessarily adopt the position reflected by that report.

The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication or credit any overpayment to Deposit Account No. 500845.

Respectfully submitted,

DALY, CROWLEY & MOFFORD, LLP

Dated: 1/21/03

By: _____

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EMC2-048pus-IDS Letter 011603.doc

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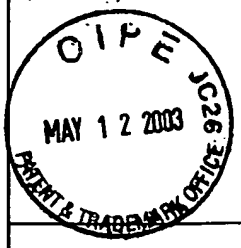
(Rev. 8-83)

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE



INFORMATION DISCLOSURE CITATION

Page 1 of 1

ATTY. DOCKET NO.	APPLICATION NO.
EMC2-048PUS	**09/606,730**
APPLICANT: **Paul C. Wilson et al.**	
FILING DATE: **June 29, 2000**	GROUP: **2754**

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE*
		4 4 8 0 3 0 7	10/30/84	Budde, et al.	364/200		
		5 1 1 9 4 8 5	06/02/92	Ledbetter, jr. et al.	395/425		
		5 2 6 9 0 1 1	12/07/93	Yanai, et al.	395/425		
		5 4 7 9 6 1 1	12/26/95	Oyama	395/185.01		
		5 7 4 2 7 8 9	04/21/98	Ofer, et al.	395/438		
		5 8 0 5 8 2 1	09/08/98	Saxena, et al.	395/200.61		
		5 8 1 9 0 5 4	10/06/98	Ninomiya, et al.	395/308		
		5 8 1 9 1 0 4	10/06/98	Tuccio	395/822		
		5 8 9 0 2 0 7	03/30/99	Sne, et al.	711/113		
		6 0 0 9 4 8 1	12/28/99	Mayer	710/33		
		6 0 3 8 6 3 8	03/14/00	Cadden, et al.	711/111		
		6 0 6 1 2 7 4	05/09/00	Thibault, et al.	365/189.05		
		6 1 2 5 4 2 9	09/26/00	Goodwin, et al.	711/143		
		6 1 7 8 4 6 6	01/23/01	Gilbertson, et al.	710/3		
		6 2 3 0 2 2 9	05/08/01	Van Krevelen, et al.	710/131		
		6 2 7 5 8 7 7	08/14/01	Duda	710/23		
		6 3 1 7 8 0 5	11/13/01	Chilton, et al.	710/129		
		6 3 7 8 0 2 9	04/23/02	Venkitakrishnan, et al.	710/317		
		6 3 8 9 4 9 4	05/14/02	Walton, et al.	710/126		
		6 3 9 7 2 8 1	05/28/02	MacLellan, et al.	710/113		

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES	TRANSLATION NO
		WO 99/26150	05/27/99	PCT				

OTHER DOCUMENTS *(including Author, Title, Date, Pertinent Pages, Etc.)*

Examiner		Date Considered:

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and considered. Include copy of this form with next communication to applicant.

Appln. No. 09/682,730 Attorney Docket No. EMC2-048PUS By: RMS/tlb
Title: Data Storage System Having Point-To-Point Configuration
Application of: Paul T. Wilson, et al.
*The Following, DUE _____ in the U.S. PTO, was received in the Mail Room on the date stamped hereon:

- ☐ Mailing by Express Mail (37 CFR 1.10)
  Express Mail Label No.
- ☑ Cert. of Mailing under 37 CFR 1.8(a)
- ☐ Application for Patent incl. _____ pgs
  (____ pgs.) Specification, (____ pgs.) Abstract,
  (_____ pgs.) Claims (Claims ____ - ____
- ☐ Declaration Petition/ Power of Attorney
- ☐ Design Patent Application & Declaration &
- ☐ Drawings ____ Sheet(s) ___ Formal ___Informal
  (Figs. _____)
- ☐ Request For Non-Publication (PTO Form sb0035)
- ☐ CPA/RCE
- ☐ Revocation of Power of Attorney/Appointment of New Power of Attorney
- ☐ Other_____
- ☑ Info. Disc. Statement, PTO Form 1449 and 21 Reference(s) Cited

- ☐ PCT Request 101 (____ sheets)
- ☐ Chapter II Demand
- ☐ PCT Fee/Calculation/Authorization Sheet
- ☐ Response to Correct Defects
- ☐ Check for $_____Check #_____
- ☐ Check for $_____Check #_____
- ☐ Amendment/Response
- ☐ Letter to Official Draftsman
- ☐ Response to Notice to File Missing Parts
- ☐ Notice of Appeal
- ☐ Power of Attorney
- ☐ Brief (____x3)
- ☐ Petition for Ext. of Time (x2)
- ☑ Transmittal Letter PTOSB121
- ☐ Fee Transmittal Letter
- ☐ Assignment
- ☐ Maintenance Fee Transmittal

Mailing Date 1-21-03

Docketed